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Assessing Readiness for Establishing a Farmers' Market at a Community Health Center

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Abstract

Farmers' markets are community health promotion interventions that increase access to fresh fruits and vegetables. As farmers' markets continue to develop, it is important to strategically locate them in settings that are accessible to populations disparately affected by health disparities. One potential setting is a community health center. The goal of this analysis is to extend existing research on community readiness to identify indicators of preparedness among community health centers for establishing onsite farmers' markets. The sampling frame for the readiness assessment included all community health centers in South Carolina (N = 20) representing 163 practice sites. Data collection included two brief online surveys, in-depth key informant interviews, and secondary analysis of contextual data. Five themes related to readiness for establishing a farmers market at a community health center were identified: capacity, social capital, awareness of health problems and solutions, logistical factors, and sustainability. Findings from this study provide guidance to researchers and community health center staff as they explore the development of environmental interventions focused on reducing diet-related health conditions by improving access to healthy foods.

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Keywords

Community health center; Federally qualified health center; Obesity; Farmers' market; Community readiness

Introduction

Obesity among Americans is a public health threat affecting about one-third of the population [1, 2]. Obesity rates are even higher among racial and ethnic minority populations living in the South [3]. Novel approaches for curtailing obesity disparities are desperately needed. Behavioral change interventions designed to improve individuals' energy balance are necessary, but they may be insufficient for achieving and maintaining the goal of obesity reduction among disparate populations [4]. Environmental interventions focused on improving access to healthy foods are emerging as a complement to individually oriented approaches. The Centers for Disease Control and Prevention (CDC) recently released several state-level indicators focused on promoting public health by increasing the availability of healthy food retail outlets such as farmers' markets in communities [5].

Farmers' markets are environmental interventions that increase access to fresh fruits and vegetables. The number of farmers' markets in the United States (U.S.) has grown exponentially over the past decade [6]. Though this growth represents an exciting opportunity for both food producers and consumers, the benefits of farmers' markets are not evenly distributed [7]. Data reveal that farmers' market customers tend to be White, middle-aged, middle to upper class, and well-educated [8, 9]; these demographics mirror the composition of communities where farmers' markets tend to be located [10]. More recently, a few farmers' markets have been purposefully developed in communities with high rates of poverty, communities of color, and/or communities with limited access to healthy foods [7, 11–14]. These communities are more likely to be adversely affected by diet-related health conditions [3, 15].

As farmers' markets continue to develop, it is important to be strategic about locating them in settings that are accessible to populations differentially affected by health disparities. One potential setting is a community health center. Federally qualified health centers or community health centers are community-driven, non-profit health care delivery organizations that provide quality patient-focused health care in a comprehensive and culturally appropriate manner. Primarily, these organizations provide preventive and primary health care services along with other related services including health education, case management, pharmacy, dental, oral health, and others. These services are provided in an effort to ensure the centers' patient populations receive comprehensive care. Additionally, community health centers provide care to individuals regardless of their socioeconomic status or ability to pay, and therefore serve as a safety net provider for many vulnerable populations. An important element to the community health center model is their focus on having the needs of the community drive the types and methods of service delivery. Community input is provided in various ways including community and consumer representation on the health centers' board of directors; the majority of the members on a community health center board must be recipients of services from the health center.

Establishing farmers' markets or other environmental interventions to increase access to healthy foods (e.g., community garden, grocery store) represents a new scope of work for many community health centers. Hence, there is a need for methods to determine health center readiness for conducting this type of intervention. Community readiness for prevention programming has been assessed in prior research focused on tobacco, alcohol,

and obesity prevention interventions [16–19]. However, community readiness has not been used to specifically examine health center readiness for establishing environmental interventions focused on improving access to healthy foods.

Community readiness is defined as the "relative level of acceptance of a program, action or other form of decision-making activity that is locality-based," [16] and is considered to be along a continuum that includes nine stages from "community tolerance" (i.e., acceptance of *status quo*, no interest in making community changes) to "professionalization" (i.e., widespread support for community-level prevention programming and monitoring) [16]. It is hypothesized that communities that are further along the readiness continuum will be more prepared to enact prevention programming, and will thus experience greater levels of effectiveness and sustainability. Factors that are considered to influence a community's preparedness to address health issues include prior involvement in prevention programming, knowledge about prevention programming, leadership and community support, information and awareness about the health problem, and available funding for prevention programming [16].

In this analysis, we extend existing research on community readiness to identify preparedness among community health centers for establishing onsite farmers' markets. The goal of our analysis is to describe the process we used to assess readiness among all community health centers in the state of South Carolina as well as the emergent dimensions of health center readiness for establishing an environmental intervention to increase access to healthy foods. In this analysis, we use the terms "federally qualified health centers" and "community health centers" interchangeably.

Method

Sample

The sampling frame for the readiness assessment included all federally qualified health centers (FQHCs) in South Carolina (N = 20). These centers represent 163 practice sites. The Executive Director of each FQHC was initially contacted to complete a brief survey to determine interest in establishing a farmers' market at one of their practice sites. Six FQHCs (31.6%) indicated interest in establishing a farmers' market at a practice site(s). These six FQHCs received a second survey to identify the specific practice sites within their network that might be interested in the farmers' market intervention. Five FQHCs completed the second survey and identified 15 potential practice sites for the intervention. Onsite key informant group interviews were conducted at four FQHCs; one was excluded because it was located more than 100 miles from the university where the research team was based. Group interviews included two to five key informants such as the Chief Executive Officer, Medical Director, Nursing Director, and Compliance Officer.

Instruments

General Interest Surveys—Two general interest surveys were used; both were completed electronically by the Executive Director of the FQHCs. The first included two "yes/no" questions: (1) Are you interested in exploring the establishment of a farmers' market at or near one of your sites? and (2) If so, is there a farmers' market or grocery store in close proximity to the site(s) you are considering? All FQHCs that responded "yes" to the first question received a follow-up electronic survey to gain additional information about their interest in the farmers' market intervention. The second survey included four questions: (1) Why are you interested in having a farmers' market at one of your health center sites? (open-ended response), (2) How likely is it that a farmers' market would be used by patients, staff, and community members at one of your health center sites? (3-point Likert scale,

"very likely" to "unlikely"), (3) Which of your health center site(s) would be most successful in implementing an on-site farmers' market (list up to four), and (4) What types of obesity and/or cancer prevention efforts are currently implemented at these sites (please list and describe)?

Group Interviews—Four research team members conducted one in-person group interview at each FQHC site that expressed interest in having a farmers' market. One team member was affiliated with the South Carolina Primary Health Care Association, which is the membership association for all FQHCs in South Carolina. The other three were affiliated with University of South Carolina. Interviews took about 1 h. The interview protocol was adapted from prior community readiness interview protocols [16, 19, 20]. Questions were tailored to reflect health center readiness for the creation of an onsite farmers' market to increase access to healthy foods at affordable prices. The interview included eight overarching questions; each question had several sub-questions. Interview questions included (1) What types of programs or activities have occurred in your community and/or at your health center related to increasing access to fresh produce?, (2) What is the general attitude about increasing access to fresh produce in your community and at your health center?, (3) Is there information about food accessibility concerns in the community and diet-related health conditions among patients at the FQHC and the community at large?, (4) Who, if anyone, provides funding for programs focused on increasing access to fresh produce and how long will this funding continue?, (5) What is the health center's attitude about funding prevention programs like a farmers' market?, (6) What are the primary obstacles to increasing access to fresh produce in your community?, (7) Have you talked about establishing a farmers' market at the community health center?, and (8) What is your vision for having a farmer's market at the community health center? In addition to these questions, eight logistical questions were asked (e.g., Do you have outdoor space available for the farmers' market?, Is the clinic located in a high traffic area to attract customers?). Detailed field notes were recorded at each interview. A tour of the facility also was conducted to see where the farmers' market could be located at the site.

Contextual Analysis—Existing datasets were used to further explore the contexts of the four FQHCs with expressed interest in the farmers' market intervention. To better understand the county-level context of each FQHC, three datasets were explored (two of the FQHCs were located in the same county). First, the County Health Rankings database was used to determine the overall health ranking of the counties with selected FQHCs as well as county-level measures of access to healthy food retail outlets [21]. Second, BRFSS data were used to explore prevalence of diet-related health conditions in each county [22]. Third, agricultural Census data were used to determine the agricultural resources in the county that could be used to support a farmers' market [23]. Next, Census data [24] was used to examine city-level demographics (e.g., population, racial/ethnic composition, income levels, poverty rates). Finally, the patient profiles of each FQHC were reviewed using data from a common electronic record management system operated by the state-wide primary healthcare association. This included a report on the demographics of the patient population and the prevalence of diet-related health conditions at each FQHC. These data are available in Table 1.

Analysis

Descriptive statistics of the contextual data were calculated. Qualitative data were analyzed inductively and iteratively by an interdisciplinary team of four researchers to identify themes. Each reviewer presented coded data to the research team; areas of agreement and divergence in coding patterns were discussed and used to refine the codebook. Themes were accepted based on group consensus regarding salience in the data sources.

Results

Five themes related to readiness for establishing a farmers market at a community health center were identified from the data sources: capacity, social capital, awareness of health problems and solutions, logistical factors, and sustainability (see Table 2).

Capacity

Capacity was identified as a key indicator of community health center readiness. We defined capacity as the ability to mobilize health center and community resources to implement and sustain the intervention. Indicators of capacity included two dimensions: institutional support and a previous history of programming to increase access to healthy foods or improve diet.

Institutional support included clinic and community leaders who could serve as organizers for the intervention. Clinic leadership was evidenced by key informants when they identified staff on-site who could become champions for the farmers' market. One site had an employee wellness program that would also provide staff support for this type of intervention. Community leadership was illuminated when key informants described access to community resources including local churches, colleges and universities, and elected officials who could not only support the cause but also provide assistance during the planning and implementation stages. Other indicators of capacity included prior relationships with local non-profit organizations and governmental agencies that could assist in the process such as the Department of Social Services, Department of Health and Environmental Control, Head Start, Council on Aging, Migrant Health, and Association of Pastors. Respondents indicated that previous partnerships with these organizations would enable the community health centers to build on ties that were already in place. In addition, the implementation of the farmers' market would allow the centers to forge new relationships that had not previously been attempted.

The second dimension of capacity was a previous history of programming to increase access to healthy foods or improve diet. Prior programming included cooking classes, food and nutrition education, community gardening, and a financial incentive program for produce purchased at a local farm stand. Although none of these programs were currently in operation, experiences with them provided insights for future environmental intervention efforts. For example, stakeholders at one site described barriers that emerged during a previous food access program such as inconvenient time of the program and lack of support to sustain the efforts.

Social Capital

Social capital was identified as a key indicator of readiness. We defined social capital as the ties and connections available that may be leveraged to mobilize environmental interventions at the community health center [25]. Indicators of social capital included three dimensions: partnerships and collaborations, collective efficacy, and public image.

The degree to which the community health center was connected to and in partnership with other community organizations was one aspect of social capital. This was evidenced through formal interactions such as staff involvement with local boards and civic associations such as Rotary Club, Kiwanis, and faith-based organizations. Other indicators of connectedness and partnership with the broader community included the provision of health fairs in community venues and regular distribution of newsletters to partners. Additionally, connections to key stakeholders such as government leaders (e.g., mayor, city council) and local community foundations (e.g., United Way) were indicators of connectedness. The second dimension of social capital was the level of connection among stakeholders in the

broader community in which the health center resided and a belief that these connections could be activated for change (i.e., high collective efficacy). In essence, was the health center situated within a "tight knit" and active community? This was evidenced by the identification of strong and active neighborhood associations, faith-based organizations, schools, and universities near the health center. Key informants reported that some of these groups had worked on farmers' markets in the past or were currently running nearby markets, and thus provided experiential wisdom to future farmers' market efforts. The third dimension of social capital was the self-reported public image of the health center. Overall, the community health centers perceived that they were well-received by the community but noted an interest in improving their public image. One site, for instance, indicated that they wanted to move from being solely a "resource" in the community to an "asset." Another indicator of public image was the types of patients at the community health center site. FQHCs are primary health care facilities that can be used by any type of patient, though they tend to be viewed as primarily serving uninsured and underinsured populations. Stakeholders often noted during the site visits if they provided care to community leaders. For example, one site was very proud that the president of a local university was one of their patients and also a public advocate for the community health center. The presence of community leaders as patients was perceived to be a marker of status in the community. Furthermore, each site indicated that they wanted to increase the diversity of their patient population, and they viewed the farmers' market as one tool for recruitment.

Awareness of Health Problems and Solutions

An additional dimension of readiness that emerged was the centers' awareness of health-related problems, needs, and solutions in their communities. Awareness themes were related to: an ecological perspective of community health problems and the need for healthy food availability; a community-informed recognition of these health problems and needs; existing barriers to accessing and eating healthy foods; and the vision that the farmers' market will serve as the solution to community health problems.

First, staff at the community health centers had an awareness of community needs based on an ecological perspective to health. That is, key informants recognized that the health problems they were witnessing at the community health center were affecting a large proportion of the community and needed to be resolved at the community level, not merely an individual level. Key informants discussed problems such as obesity, diabetes, and other diet-related conditions and they stressed the importance of increasing the health and quality of life of the community as a whole. Specific communities of interest included the clinic, faith-based, neighborhoods, and business. Key informants noted clinic patients' needs for affordable and healthy foods as a solution to health problems, and they recognized the importance of communitywide involvement in efforts to improve health.

Second, it was evident that key informants' knowledge and awareness of community health issues were based on their own life experiences from being part of the community. From direct involvement in and frequent interaction with the community, center staff and stakeholders were familiar with health concerns such as poor eating habits, unhealthy cooking styles, and limited access to fresh produce. Their descriptions of previous experiences with community health promotion programs also demonstrated this informed awareness. Third, health centers were very aware of community barriers to accessing and eating healthy foods such as the high cost of fresh produce and healthy foods, long distance to stores selling fresh produce, lack of transportation, and inconvenient hours of store operation. Key informants also perceived that health center patients had limited understanding about the importance of healthy eating and the relationship between diet and health.

Finally, all centers anticipated that starting a farmers' market at their site was one solution to overcoming these barriers and meeting the health needs of the community. When asked to describe their vision for an on-site farmers' market, key informants unanimously agreed that it would provide the community with convenient, affordable, and healthy foods; provide preventive care to patients and the broader community; allow for better health care provision; create an opportunity for point-of-purchase health education; provide a space for social interaction and community connectedness; and serve as a catalyst for recruiting more patients to the health center. In short, sites perceived the farmers' markets to be a mutually beneficial approach to improving the health of the community and supporting the mission of the health center.

Logistical Factors

Logistical factors emerged as particularly important and not easily modifiable factors related to readiness for establishing a farmers' market at a health center. Logistical factors included elements of physical location, patient volume, and access to local farms and farmers (see Table 1). It was imperative that the sites had outdoor space available with access to electricity, space for farm vendors, parking for customers, and restrooms. All of the sites had outdoor space available for the farmers' market; however, three of the sites had limitations related to access to the other resources. For instance, one site did not have access to a restroom without interrupting patient care; a portable restroom would have been needed at this site. It was also important that the health center was located in a high traffic area to ensure adequate customer flow. One of the sites was located on a main highway with both a high school and a college within miles, a low-income apartment complex adjacent to the health center, and a bus stop near the site. Another health center was located on a bus line in a community inclusive of two historically black colleges and near at least seven predominantly African-American churches. The two most rural sites indicated that inadequate public transportation was a logistical barrier for their patient populations. For instance, key informants at one of these sites indicated that the bus only came by the health center twice per day—in the early morning and late afternoon. Patient volume was another logistical factor considered. The community health centers reported that they provided care for between 100 and 300 patients daily and had staff sizes ranging from 15 to 100. Based on reports from a state-wide electronic medical record system for the health centers, we learned that about two-thirds of the patients at each site had a chronic health condition that required regular visits to the health centers (see Table 1).

We also reviewed the US Agricultural Census and Local Harvest website to examine farming trends near each site because we needed farmers to fulfill the demand created by the emergent farmers' market. Finally, the distances between the health centers and the university were considered because we had limited funding for travel costs for the research team. The health centers were between five and 80 miles away from the university

Sustainability

Finally, sustainability factors emerged as indicators of readiness. Sustainability factors encompassed understanding of the demands of the intervention, broad support for the project, and ownership of the project that would contribute to the continuation of the farmers' market. Key informants indicated varying degrees of awareness of the demands associated with operating a farmers' market at the community health center. One site was unclear about the demands whereas the others were aware of the costs and commitments related to this type of environmental intervention. The most salient demands were related to the time needed to develop and execute a farmers' market and the costs associated with this type of intervention. One site expressed strong concerns about the time and cost demands in a setting that was already constrained; key informants at this site inquired about the need for

hiring a farmers' market manager to assist with this type of intervention. A few key informants expressed the need for developing a business plan to ensure that the farmers' market was economically sustainable.

Another indicator of sustainability was the level of support or buy-in for the farmers' market by staff, patients, and the broader community. Staff support was revealed, in part, by the key informants in attendance at the on-site interviews. Only one site included their CEO in the interview, though the CEO of the other sites expressed regrets for not attending and indicated that they were supportive of the farmers' market intervention. Staff support also was evident when key informants defined how the farmers' market intervention would support the mission of the health center. All sites indicated that the farmers' market would advance their mission to provide quality, comprehensive health care by increasing access to healthy foods; the market was also identified as a method for recruiting new patients to the clinic, which would further their mission. Two sites provided a much broader vision of the farmers' market intervention; they envisioned the markets to be the first stage in a series of interventions, such as grocery stores and urban agriculture programs, to increase food access and economic opportunity for their patient population and the broader community. Key informants expressed the need for engaging patients and the broader community to ensure market sustainability. One site indicated that they would need to actively engage a neighborhood association and nearby churches to facilitate success. Finally, the level of ownership of the farmers' market by key stakeholders was identified as an important element of sustainability. Two sites reported that they had recently engaged in a community garden and farmers' market intervention program but had very little ownership of these interventions. Given their limited ownership, the community garden project ended once funding ended and the future of the farmers' market project was unclear.

Discussion

Findings from this study provide direction for identifying community health centers that may be primed to develop health promotion interventions focused on increasing access to healthy foods. These results are particularly relevant to community health centers, but also may be applied to other settings. We identified five indicators of readiness for establishing an environmental intervention such as a farmers' market at a community health center. The five dimensions of community readiness identified parallel existing readiness measures [16, 20]; however, our findings reveal important nuances to readiness that are relevant to environmental food access interventions at community health centers. The dimensions of readiness include: (1) capacity to mobilize health center and community resources to implement and sustain the environmental intervention, (2) social capital that may be leveraged to mobilize environmental interventions at the health center, (3) an awareness of community health problems and the importance of community-level solutions, (4) ability to address logistical factors and provide the unique resources needed to implement and support an environmental intervention at the health center, and (5) the awareness of and ability to provide resources needed to sustain the intervention. Each indicator includes several dimensions that may be assessed as researchers and practitioners consider the development of environmental interventions to promote healthy eating and improve diet-related health outcomes.

Our study did not have the capacity to examine the relative effect of each indicator of readiness, though we hypothesize that each indicator is uniquely important and necessary for eventual success. For instance, a site that can address the logistical factors needed to develop an environmental intervention may not have the capacity to develop and successfully sustain this type of project. Future research is needed to examine the importance of each indicator on intervention success.

Our analysis also contributes to research focused on the context in which interventions are implemented. Although context is an important aspect of intervention effectiveness, the contextual factors aligned with program implementation are often unexamined or unreported leading to a lack of transparency in how settings for community-based interventions are selected [26]. Documenting the steps involved in assessing community readiness and reporting on the site selection process stands to enhance our ability to identify sites poised for partnership and increase the success of health promotion programs. Community readiness assessments also provide insights into the preliminary intervention efforts needed to enhance contextual factors to prime sites for success in intervention delivery. While general measures of community readiness are important starting points for assessing contextual factors, intervention-specific measurements may be more useful. For instance, assessing readiness to implement a health education curriculum at a health center may require different strategies than assessing readiness to implement a farmers' market at the health center. We are unaware of other tools for determining preparedness among community health centers for establishing farmers' markets.

Our findings also have implications for external validity [26, 27]. If we are unable to understand the situational and contextual factors underlying program implementation, our ability to effectively replicate evidence-based and other promising programs is limited. The five dimensions of community readiness emergent in our research may contribute to scholarship focused on understanding the context of community-based interventions focused on improving access to healthy foods. Naturally, community-based settings vary by a number of factors. If we are forthcoming about the elements considered in site selection processes, measure such elements of context, and deepen our understanding of how these elements may have contributed to achieving the desired outcomes of community-based programs, then we will enhance our understanding of intervention strategies designed to achieve improvements in health status.

In conclusion, as community health centers continue to expand their efforts to provide comprehensive primary and preventive health care, many may venture into intervention efforts focused on improving access to healthy foods. This type of environmental intervention strategy resonates with the history of community health centers. In fact, one of the early physicians in the community health center movement was known for writing prescriptions for food since malnutrition was the root cause of ill health among community members [28]. Findings from this study may provide guidance to researchers and health center staff as they explore the development of environmental interventions focused on reducing diet-related health conditions by improving access to healthy foods for their patients and the broader community.

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Table 1

Profiles of federally qualified health centers (FQHC) interested in establishing an onsite farmers' market

	County 1		County 2	County 3
	FQHC 1	FQHC 2	FQHC 3	FQHC 4
County-level characteristics				
Health ranking[a]	11	11	16	41
Access to healthy foods (%)[a]	35	35	29	72
Disease rates (%)[b]				
Diabetes	11	11	12	13
Hypertension	26	26	34	34
Cancer	8	8	14	7
Coronary heart disease	3	3	4	4
Obesity	30	30	31	41
Overweight	33	33	39	34
Active farms[c]	364	364	1,206	1,002
Vegetables, melons, potatoes sold, $	336,000	336,000	1,732,000	1,445,000
Fruits, nuts, berries sold, $	305,000	305,000	2,270,000	n/a
City-level characteristics[d]				
Total population	113,278	830	25,337	12,765
Racial composition (%)				
White	49	7	67	30
African American	46	92	30	68
Hispanic	3	<1	1	1
Median household income, $	31,141	20,114	49,100	30,306
Households below poverty (%)	22	37	14	25
Patient characteristics[e]				
Patient population	35,627	12,847	6,799	25,654
Racial composition (%)				
White	14	12	36	14
African American	57	84	41	75
Hispanic	21	<1	20	2
Below poverty (%)	71	79	23	71
Insurance status				
Medicaid (%)	27	29	53	30
Uninsured (%)	27	29	53	30
Disease rates (%)				
Diabetes	3	15	8	15
Hypertension	7	41	24	6

Data Sources:

[a]Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute, 2010

[b] Centers for Disease Control and Prevention, 2009a

[c] U.S. Department of Agriculture, 2009

[d] U.S. Census Bureau, 2000;

[e] South Carolina Primary Healthcare Association, 2009

Table 2

Dimensions of readiness for establishing an environmental intervention at a health center

Indicator of readiness	Definition	Dimensions
Capacity	Ability to mobilize health center and community resources to implement and sustain the environmental intervention.	Institutional support
		History of programming to increase access to healthy foods or improve diet
Social capital	Ties and connections available that may be leveraged to mobilize environmental interventions at the health center.	Partnerships and collaboration
		Collective efficacy
		Public image
Awareness of health problems and solutions	Understanding of community health concerns and needs and related solutions.	Ecological perspective of health problems
		Community-informed understanding of health concerns
		Awareness of barriers to accessing and eating healthy foods
		Vision that farmers' market will serve as the solution to community health problems
Logistical factors	Resources needed to implement and support an onsite farmers' market.	Physical location
		Patient volume
		Access to local farms and farmers
Sustainability	Resources needed to sustain the intervention.	Awareness of intervention demands
		Broad support for the intervention
		Ownership of the intervention